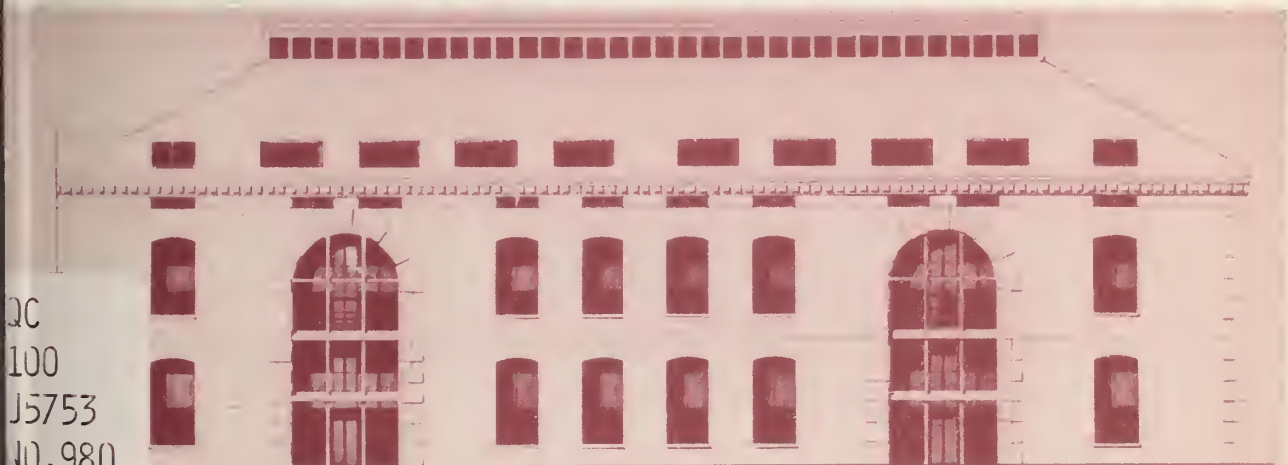




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Historic Preservation Incentives of the 1976 Tax Reform Act: An Economic Analysis

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Historic Preservation Incentives of the 1976 Tax Reform Act: An Economic Analysis

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Washington, D.C. 20234



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PREFACE

The potential for the reuse of existing buildings has attracted national attention in the past decade through such celebrated examples as Ghirardelli Square in San Francisco and Trolley Square in Salt Lake City.

Because of the public benefits that often accompany the preservation and rehabilitation of historic buildings, incentives to encourage this type of activity have been proposed. Indeed, several tax incentives for the preservation of certified historic buildings have already been enacted as part of the Tax Reform Act of 1976 (P.L. 94-455, Section 2124). The purpose of this Technical Note is to determine how effective these tax incentives are in making historic preservation more financially attractive than demolition and redevelopment.

The Applied Economics Program of the Center for Building Technology, National Bureau of Standards has conducted this research in order to assist potential investors and owners of historic properties in making cost-effective decisions and to provide policy makers with information on the effectiveness of tax incentives for historic preservation. The approach developed in this report could also be used to analyze incentives for other types of building rehabilitation.

Dr. Harold E. Marshall, Chief of the Applied Economics Program and Rosalie T. Ruegg deserve special thanks for their comments and suggestions for improving this report. The author is also grateful for the helpful recommendations of the NBS reviewers, Dr. Paul W. Brown, Dr. Robert A. Glass, and Dr. Carol A. Chapman. In the initial stages of this project, Robert J. Kapsch provided invaluable assistance by helping to focus the research and by organizing meetings with staff members at the National Trust for Historic Preservation (NTHP). Russell V. Keune, Michael S. Leventhal, Frank B. Gilbert, and Gregory E. Andrews, all of NTHP, and Baird Smith and H. Ward Jandl, both of the Heritage Conservation and Recreation Service, U.S. Department of the Interior, were very helpful in providing information about historic preservation and the relevant details of the Tax Reform Act. H. Ward Jandl also generously supplied the photographs of historic preservation projects. The author is also greatly indebted to Bobbie C. Cassard for a thorough search of the literature on economic aspects of rehabilitation and historic preservation, to Joel Levy for development of the computer programs, to Kimberly A. Hockenbery for computer assistance, and to Sarah Stewart, Carol Thompson and Kathleen Magruder for typing the manuscript. Responsibility for any errors and shortcomings that remain rests solely with the author.

Cover: This Boston Navy Shipyard building will be converted into apartments as illustrated by the architect's drawing.

ABSTRACT

The Tax Reform Act (TRA) of 1976 includes several provisions which affect the financial position of owners of income-producing historic buildings. This report analyzes the effect of the TRA on the after-tax cost of two basic alternatives facing the owner: (1) rehabilitate the structure; or (2) demolish it and redevelop the site. A life-cycle cost minimization model was developed, programmed in BASIC language, and applied in an after-tax comparison of six alternative situations representing rehabilitation and re-development both before and after the TRA. Under the assumptions of the model used in this analysis, the TRA has made the rehabilitation option significantly more attractive than previously. The former tax bias in favor of demolition and re-development has been reversed. Until now, this information on the life-cycle tax advantages of rehabilitating historic buildings has been unavailable. This report will help corporate investors make cost-effective decisions regarding historic preservation of nonresidential buildings and provide policy makers with information on the effectiveness of these tax incentives. The approach utilized could be adapted to analyze incentives for other types of building rehabilitation.

Key words: Adaptive reuse; buildings; demolition; economics; historic preservation; life-cycle costing; re-development; rehabilitation; tax incentives.

CONTENTS

| | Page |
|---|------|
| PREFACE..... | iii |
| ABSTRACT..... | iv |
| EXECUTIVE SUMMARY..... | 1 |
| 1. INTRODUCTION..... | 2 |
| 1.1 PURPOSE AND SCOPE..... | 2 |
| 1.2 ORGANIZATION..... | 3 |
| 2. HISTORIC PRESERVATION PROVISIONS OF THE TAX REFORM ACT..... | 4 |
| 2.1 ACCELERATED DEPRECIATION OF SUBSTANTIALLY REHABILITATED BUILDINGS..... | 4 |
| 2.2 RAPID AMORTIZATION OF REHABILITATION EXPENDITURES..... | 4 |
| 2.3 DENIAL OF DEMOLITION COSTS AS CURRENT EXPENSES..... | 5 |
| 2.4 DENIAL OF ACCELERATED DEPRECIATION FOR REPLACEMENT STRUCTURES..... | 6 |
| 3. ANALYTICAL FRAMEWORK..... | 7 |
| 3.1 ALTERNATIVE SITUATIONS..... | 7 |
| 3.2 LIFE-CYCLE COST MODEL..... | 9 |
| 4. ANALYSIS OF RESULTS..... | 11 |
| 5. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH..... | 13 |
| BIBLIOGRAPHY..... | 15 |
| APPENDIX A: DETAILED RESULTS..... | 17 |
| APPENDIX B: COMPUTER PROGRAMS..... | 18 |
| APPENDIX C: PUBLIC LAW 94-455, Section 2124..... | 22 |

EXECUTIVE SUMMARY

The Tax Reform Act (TRA) of 1976 (P.L. 94-455) contains a number of provisions which affect the financial position of owners of income-producing historic buildings. Prior tax law tended to penalize historic preservation by allowing more rapid acceleration of depreciation schedules for new buildings and by permitting demolition costs to be deducted in the year in which they occur. The TRA has provided a more favorable tax environment for historic preservation by removing these tax penalties. The effect of the tax changes depends on the type of building (residential versus nonresidential) and on the legal form of ownership.

This Technical Note analyzes the effect of the TRA on the after-tax cost of two basic alternatives facing corporate owners of nonresidential historic buildings: (1) rehabilitate the structure; or (2) demolish it and redevelop the site.

The purpose of this report is to help corporate investors make cost-effective decisions regarding historic preservation of nonresidential buildings and to provide policy makers with information on the effectiveness of these tax incentives for historic preservation. The analytical approach developed in this report could also be applied to incentives for other categories of building rehabilitation.

The analysis is conducted from a life-cycle cost point of view so that all of the financial impacts of the tax provisions occurring over the lifetime of the structure can be taken into account. Thus, full consideration is given to the tax benefits occurring each year, as well as to the tax liabilities occurring when the property is sold. The annual tax benefits arise from deductions for depreciation or for the special 5-year rapid amortization allowed by the TRA. The tax liabilities arise both from capital gains and from the recapture as ordinary income of all or part of depreciation or amortization deductions.

The life-cycle cost model calculates the sum of the following items: (1) rehabilitation costs (or demolition and construction costs); (2) minus the present value of annual depreciation or amortization write-offs; (3) plus the present value of the capital gains taxes and recapture taxes due when the property is sold; and (4) minus the present value of the proceeds from the sale. These calculations are made for rehabilitation and for redevelopment both before and after the TRA. For the case of rehabilitation after the TRA, separate calculations are made for each of three alternative provisions of the TRA: (1) accelerated depreciation for substantial rehabilitation; (2) rapid amortization with full recapture; and (3) rapid amortization with partial recapture. Sensitivity analysis is conducted with respect to several key parameters: (1) the holding

period; (2) the discount rate; and (3) demolition costs.

The results indicate that the TRA has significantly affected the economic trade-off between rehabilitation and redevelopment for historic properties. Before the TRA, rehabilitation used to be between 4 percent and 9 percent *more* costly than redevelopment, whereas after the TRA, the rapid amortization provision causes rehabilitation to be between 13 percent and 28 percent *less* costly than redevelopment. The accelerated depreciation provision for substantially rehabilitated structures is also seen to make rehabilitation less costly than redevelopment.

In conclusion, this study suggests that the TRA has tipped the tax scale in favor of historic preservation. Current and prospective owners of historic structures now have a strong incentive to consider rehabilitation as a serious alternative to demolition. Whereas formerly there was a distinct tax bias in favor of demolition and redevelopment, now that bias has been reversed, from the point of view of after-tax life-cycle costs. This new information on the economic effects of the TRA should be useful to corporate owners of historic nonresidential properties as well as to anyone interested in tax-incentives policies for the rehabilitation of all types of existing buildings.

1. INTRODUCTION

The potential for the reuse of existing buildings has attracted national attention in the past decade through such notable examples as Ghirardelli Square in San Francisco and Trolley Square in Salt Lake City. In these and many other cases, buildings that had outlived the purposes for which they had originally been designed have been adapted to new uses.¹ This adaptive reuse of existing buildings can lead to such private benefits as cost savings in comparison with new construction as well as such public benefits as the revitalization of central cities and the preservation of architecturally significant and aesthetically pleasing buildings. Except in cases of public ownership, the decision to reuse an existing building is primarily based on the private owner's benefits and costs, which can be significantly affected by the tax structure. Before 1976, the Federal income tax system tended to influence private decisions in favor of new construction. New income-producing buildings were eligible for more accelerated depreciation schedules than existing buildings. In addition, demolition expenditures and the remaining undepreciated cost basis of the existing building could be written off in the year demolition occurred. In the successful adaptive reuse examples cited above, the underlying economic viability of the projects outweighed these tax considerations. Many other buildings with potential for adaptive reuse have been demolished because of this tax bias.

With passage of the Tax Reform Act (TRA) of 1976 (P.L. 94-455), the tax environment confronting owners of a special class of existing buildings, namely, income-producing certified historic structures, has changed.² Several provisions of the TRA have made it more financially advantageous for such owners to preserve historic buildings than was formerly the case. The magnitude of this financial, tax-based advantage of historic preservation is the subject of this report.

1.1 PURPOSE AND SCOPE

Two fundamental options which confront the owner of an historic building are: (1) rehabilitation;³ or (2) de-

molition and redevelopment of the site. The purpose of this report is to assess the comparative financial attractiveness of each of these options both before and after enactment of the TRA. The analysis is conducted on a life-cycle after-tax basis in order to take into account all tax consequences during the entire holding period which affect the financial position of the owner. Thus, full consideration is given to the tax benefits which occur each year, as well as to the tax liabilities which occur when the property is sold. The effects of the tax provisions of the TRA on the relative financial advantage of historic preservation versus demolition and new construction are measured and presented.

The scope of the present analysis is limited in several ways. In the first place, the focus is on the income tax effects of the two options of rehabilitation or redevelopment. All other consequences of such decisions are ignored by assuming that the before-tax costs of both options are equal. Secondly, the analysis is consistent with the restrictions of the TRA by limiting consideration to certified historic buildings which are held for the production of income. Thirdly, while the TRA provisions apply to all types of historic buildings, this report covers only nonresidential uses. Fourthly, the effect of the tax provisions depends on the building owner's marginal tax rates applicable to ordinary income and capital gains. For the present analysis, the rates of a corporate owner were used. Finally, the study ignores the possible effects of inflation. The analytical framework developed in Section 3 could easily be adapted to treat the cases of residential buildings, noncorporate ownership, and nonzero rates of inflation.

Reliable information on the life-cycle tax advantages of rehabilitating historic buildings in light of the TRA has been unavailable until recently.⁴ This report will help corporate investors make cost-effective decisions regarding historic preservation of nonresidential buildings. The study will provide policy makers and those interested in the preservation of historic buildings with information on the effectiveness of the tax incentives incorporated in the TRA. The approach utilized could be adapted to analyze incentives for other types of building rehabilitation.

¹ For many beautifully illustrated examples of the adaptive reuse of buildings, see Elisabeth Kendall Thompson (ed.), *Recycling Buildings: Renovations, Remodelings, Restorations, and Reuses* (New York: McGraw-Hill Book Company, 1977).

² For information on the adaptive use of historic structures, see U.S. Department of the Interior, National Park Service, *A Selected Bibliography on Adaptive Use of Historic Buildings*, Washington, D.C., 1976.

³ The terms rehabilitation and preservation are used interchangeably in this report.

⁴ In another study, Wade R. Ragas and Ivan J. Miestchovich, Jr., "Historic Preservation and the 1976 Tax Reform Act," *The Appraisal Journal*, Vol. 46, No. 1 (January 1978), pp. 44-52, a simulation model is used to analyze one provision of the TRA in terms of the present value of the investor's equity in the property. Another provision is discussed in terms of the after-tax profit available from the sale of an historic property. Neither analysis compares the two options of rehabilitation versus redevelopment nor extends beyond a 5-year holding period.

1.2 ORGANIZATION

In the next section, the four provisions of the TRA relevant to historic preservation are described: (1) accelerated depreciation for a substantially rehabilitated historic building; (2) rapid 5-year amortization⁵ of rehabilitation expenses; (3) denial of demolition costs as current expenses; and (4) denial of accelerated depreciation for new buildings constructed on the site of a demolished historic structure.



Two views are shown of the Sibley Mansion in Rochester, New York, which now serves as corporate headquarters for an international manufacturing firm. This rehabilitation project was one of the first to be approved by the Department of the Interior under the Tax Reform Act of 1976.

In Section 3, the framework for the analysis is established by defining the six alternative situations that are to be compared: (1) Redevelopment before the TRA; (2) Redevelopment after the TRA; (3) Rehabilitation before the TRA; (4) Rehabilitation with the TRA provision for accelerated depreciation of the cost basis; (5) Rehabilitation with the current TRA provision for rapid amortization; and (6) Rehabilitation with a proposed revision of the TRA rapid amortization provision. The life-cycle cost minimization model for comparing these six situations is also developed in this section.

Section 4 presents the results of the analysis and gives some indication of the degree of sensitivity of the results to several of the key parameters, such as the discount rate, the holding period, and the percentage of total cost attributable to demolition expenditures. The final section offers a summary and several suggestions for further research in this area. Three appendixes present the detailed results of the analysis in tabular form, the listings of the computer programs used in the study, as well as the text of relevant portions of the TRA.

⁵ As used in the TRA and in this report, the term amortization means writing off rehabilitation expenditures over a 5-year period.

2. HISTORIC PRESERVATION PROVISIONS OF THE TAX REFORM ACT

The special provisions of Section 2124 of the TRA cover "certified historic structures" which are depreciable under Section 167 of the U.S. Tax Code.⁶ To qualify as depreciable the structure must produce income or be used in a trade or business and not held primarily as inventory for sale to customers. According to the TRA, a "certified historic structure" is one which is listed in the National Register of Historic Places, or is located within a National Register Historic District and is certified by the Secretary of the Interior as being of historic significance to the district, or is within an historic district designated by a State or local government statute which is approved by the Secretary of the Interior. At present, there are approximately 1500 National Register historic districts and another 1000 State and locally designated districts which are potentially certifiable. Within these districts there are over a million historic structures which could be eligible for the special tax provisions as long as they are used to produce income.

The first two TRA provisions to be discussed offer tax benefits for rehabilitating historic structures, while the last two impose tax penalties for destroying historic buildings. To qualify for the first two provisions, the rehabilitation project must be certified by the Secretary of the Interior as being consistent with the historic character of the property or the district.⁷ By June 1978, over 190 rehabilitation projects in 33 states, involving a private investment of more than \$175 million, had already been certified.⁸

⁶ For an excellent summary of the historic preservation provisions of the TRA, see Covington and Burling, "Impact of the Tax Reform Act of 1976 on the Preservation of Historical Properties," an unpublished paper prepared for the National Trust for Historic Preservation, January 27, 1977. For the exact language of the relevant provisions of the TRA, see appendix C.

⁷ The procedures and standards for certified rehabilitation appear in Title 36 of the Code of Federal Regulations, Part 67. (The final rulemaking version was published in the *Federal Register*, Vol. 42, No. 195, October 7, 1977.) In addition, the Office of Archeology and Historic Preservation of the Department of the Interior has prepared a booklet, "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings," February 1978. For further information regarding special building code provisions relating to historic preservation, see Melvyn Green and Patrick W. Cooke, *Survey of Building Code Provisions for Historic Structures*, National Bureau of Standards Technical Note 918, September 1976.

⁸ U.S. Department of the Interior, "Information: Rehabilitation and the Tax Reform Act of 1976," a newsletter prepared by the Office of Archeology and Historic Preservation, June 8, 1978.

2.1 ACCELERATED DEPRECIATION OF SUBSTANTIALLY REHABILITATED BUILDINGS

One important provision of the TRA allows the owner of a "substantially" rehabilitated historic building to depreciate the entire cost basis of the building as though it were new. This cost basis includes any remaining undepreciated costs of the existing structure plus the cost of the rehabilitation itself. The significance of this provision is that the depreciation rules for newly constructed buildings allow a greater degree of acceleration, and therefore larger, immediate tax deductions, than do those for used buildings. For example, 150 percent declining balance depreciation may be applied to new nonresidential buildings, while the straight-line depreciation method must be applied in the case of used nonresidential buildings.⁹ Similarly, for newly constructed residential buildings the 200 percent declining balance method may be used, whereas for used residential buildings a method no more accelerated than 125 percent declining balance depreciation must be employed, and then only if the useful life of the building is 20 years or more. The straight-line method must be used if the life is less than 20 years.

To qualify for this provision there is an additional requirement besides the already mentioned historic certifications of the structure and of the rehabilitation project. The rehabilitation expenditures occurring within a 24-month period must exceed the greater of the adjusted cost basis of the property or \$5000. The adjusted basis is determined as of the beginning of the 24-month period and is calculated as the owner's original cost plus improvements minus depreciation deductions taken to date.

2.2 RAPID AMORTIZATION OF REHABILITATION EXPENDITURES

This provision allows the costs of a certified rehabilitation of a certified historic building to be written off (or amortized) over a period of 60 months. By contrast, in the absence of this provision, rehabilitation expenditures would have to be written off over the entire remaining life of the structure. The advantage of this rapid amortization, as with the accelerated depreciation provision, is to shift deductions closer to the present. In this case, however, the period over which the expenditures are written off is actually shortened.

⁹ Declining balance depreciation is calculated by applying a constant ratio to the remaining cost basis of the asset each year. That ratio is equal to the rate (e.g., 1.5 for 150% declining balance) divided by the useful life. This procedure is normally used until it becomes advantageous to switch to the straight-line method.

As a consequence of taking deductions earlier, certain tax liabilities are postponed so that a return can be earned on those funds in the intervening period. The other advantage normally associated with real estate depreciation, namely that of converting ordinary income to capital gains income, which is taxed at a lower rate, is not available under this provision as enacted in the TRA. This is because a portion of the gain realized from the future sale of the property equal to every dollar amortized under this provision is taxed as ordinary income (cf. I.R.C. Section 1245). In other words, there is full recapture as ordinary income, of the amortization deductions when the property is sold. This is in contrast to the recapture rules in effect for accelerated depreciation of most other real property (cf. I.R.C. Section 1250). Under the latter, only that portion of the gain upon sale equal to the accelerated depreciation taken in excess of the amount allowed by the straight-line method is taxable at ordinary income rates, while the remainder of the gain is taxed at the more favorable capital gains rates. Thus while offering the benefit of postponing tax liabilities, this rapid amortization provision of the TRA imposes the penalty of making a larger than normal portion of the gain subject to ordinary tax rates when the property is sold. An important question addressed by the present analysis is whether on balance that benefit outweighs the concomitant penalty.

It should be noted that the stipulation of full recapture of the amortization deductions appears not to have been intended by the Congress.¹⁰ Moreover, H.R. 6715, a technical corrections bill, which has passed the House, would amend the TRA so that only those amortization deductions taken in excess of what would be allowable under the straight-line method must be recaptured as ordinary income. For this reason, one of the situations selected for analysis in this study assumes the TRA has been so amended.

2.3 DENIAL OF DEMOLITION COSTS AS CURRENT EXPENSES

Not only does the TRA have provisions which benefit historic preservation, but it also has two provisions which penalize the demolition of certified historic structures. The first of these involves the way in which the costs of demolition can be used to reduce taxable income. Before the TRA, one could deduct both the demolition costs and the remaining undepreciated basis of the building as current expenses, as long as the property had not been

acquired for the purpose of demolition. If demolition was the purpose, then those costs and the remaining basis would have to be added to the value of the replacement structure and depreciated over its useful life. Now, as a result of the TRA, these demolition-related costs must be added to the value of the land and will consequently offer no tax benefit until sale of the property, when they should help reduce capital gains taxes. This same rule applies to all structures located within a registered historic district unless



Private rehabilitation efforts will permit this vacant building in downtown Seattle to be used as contemporary offices.

certification is obtained from the Secretary of the Interior prior to demolition that the structure is not of historic significance to the district. The general effects of this change are both to postpone tax benefits as well as to convert some ordinary income deductions to capital gain deductions.¹¹ Thus the after-tax cost of demolition to the owner of an historic structure has been increased as a result of the TRA.

¹⁰ See Covington and Burling, pp. 7-8, for a brief recounting of the relevant legislative history.

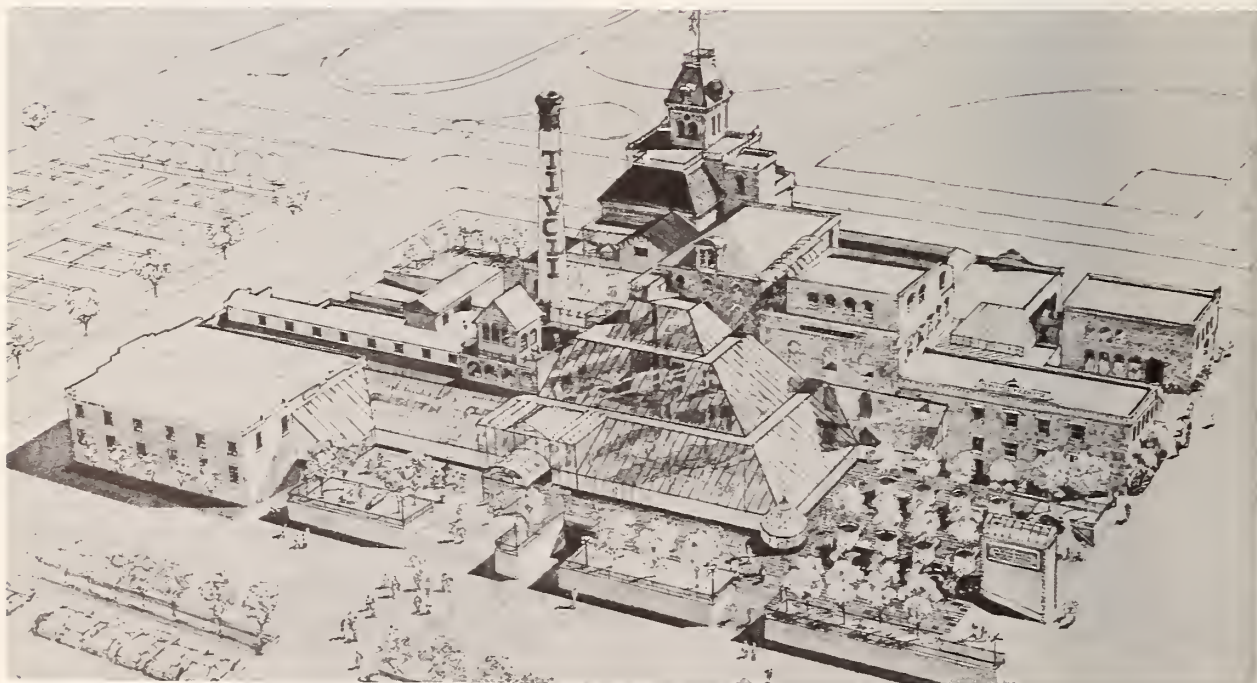
¹¹ Deductions taken from capital gains are not worth as much to taxpayers as those from ordinary income because the tax rate on the former is generally less than that on the latter.

2.4 DENIAL OF ACCELERATED DEPRECIATION FOR REPLACEMENT STRUCTURES

Another penalty imposed by the TRA for demolition of certified historic structures concerns the depreciation of the replacement structure. Only the straight-line method can be used to depreciate new buildings erected on sites which were previously occupied by

certified historic structures that have been demolished or substantially altered by other than a certified rehabilitation. The impact of this penalty depends on the type of new building involved. As explained above, new residential buildings are generally eligible for the 200 percent declining balance method. Thus the restriction to straight-line depreciation imposes a greater penalty for residential than for commercial buildings. It should be noted that this provision will not affect as many structures as the one concerning demolition costs, because the denial of accelerated depreciation applies only to the sites of structures which have actually been certified as historic prior to demolition, whereas the demolition provision operates under the presumption of certification for all structures within an historic district.¹²

¹² According to one of the provisions of H.R. 6715, The Technical Corrections Act of 1978 which is being considered by the Congress, the presumption of certification would also apply in the case of denial of accelerated depreciation.



The deteriorated Tivoli Brewery in Denver is contrasted with plans for rehabilitating the complex into an entertainment and commercial center.

3. ANALYTICAL FRAMEWORK

In this section the framework for the analysis of the TRA is established first by describing six potential situations facing historic property owners and then by presenting the life-cycle cost (LCC) model used to compare those alternative situations. These six situations are summarized in table 3.1 and explained below.

3.1 ALTERNATIVE SITUATIONS

Because the present analysis is restricted to nonresidential property, the appropriate depreciation methods of 150 percent declining balance and straight line are used for new and used buildings, respectively, in the alternative situations described here. If the analysis were

to be extended to cover residential property, then different depreciation methods would have to be assumed.

Throughout the present analysis it is also assumed that the total expenditures are the same for whichever option is chosen (i.e., either rehabilitation or demolition/redevelopment). This assumption is necessary in order to focus exclusively on the tax effects of the TRA. In this manner, consistent comparisons can be made between the alternative situations on the basis of a common unit of expenditure which was chosen to be one million dollars. This approach makes the results more general and independent of particular structures, which vary greatly in terms of their intrinsic suitability for rehabilitation.

Situation A: The first situation to be considered is that of an owner of a certifiable historic property who

Table 3.1 SIX ALTERNATIVE SITUATIONS TO BE ANALYZED ON THE BASIS OF AFTER-TAX LIFE-CYCLE COSTS

| Situation | Description | Type of Write-off | Treatment of Demolition Expenses | Recapture of Write-off as Ordinary Income |
|-----------|---|-------------------------------------|----------------------------------|---|
| A | Redevelop before TRA | 150% Declining Balance Depreciation | Current Expense | Excess over Straight Line |
| B | Redevelop after TRA | Straight-Line Depreciation | Add to Cost of Land | n.a. |
| C | Rehabilitate before TRA | Straight-Line Depreciation | n.a. | n.a. |
| D | Rehabilitate after TRA: Accelerated Depreciation Provision | 150% Declining Balance Depreciation | n.a. | Excess over Straight Line |
| E | Rehabilitate after TRA: Rapid Amortization Provision as Enacted in TRA | 5-year Amortization | n.a. | Full Recapture |
| F | Rehabilitate after TRA: Rapid Amortization Provision as Proposed in H.R. 6715 | 5-year Amortization | n.a. | Excess over Straight Line |

n.a. means not applicable.

decides to demolish the existing structure and redevelop the site with a new building. This situation is assumed to occur *before* enactment of the TRA. Under these circumstances, demolition expenses, which are assumed to be either 5 or 10 percent (i.e., \$50,000 or \$100,000) of the entire cost of demolition/redevelopment, as well as the undepreciated cost basis of the demolished building, are allowed to be deducted as current costs.¹³ Depreciation deductions for the new structure are based on the 150 percent declining balance method with the customary optimal switch to straight line when the deductions become greater using the latter method.¹⁴

Situation B: The second situation to be analyzed is also that faced by an owner of a certifiable historic property who decides to demolish the structure and redevelop the site by constructing a new building. In this case, however, the situation is assumed to take place *after* enactment of the TRA, in accord with which the structure has been certified. Under these circumstances, only straight-line depreciation may be used for the replacement building, and the 5 or 10 percent demolition expenditures plus the remaining undepreciated cost basis of the former building must be added to the cost of the land rather than be deducted as a current expense. Thus, comparison of Situations A and B shows the total effect of the TRA on the financial viability of the demolition/redevelopment option, arising both from the depreciation allowed as well as from the tax treatment of demolition expenditures.

Situation C: The third situation to be analyzed is the rehabilitation option *before* the TRA. This situation is similar to Situation B in that the straight-line method of depreciation is used, as required by law. However, it differs from both Situations A and B in that there are no demolition expenditures to consider. Thus, the entire million dollars is assumed to be devoted to rehabilitation expenditures. Comparison of Situations A

and C indicates the relative financial viability of the two options before the TRA.

The final three situations (D, E, and F) to be analyzed all treat the rehabilitation option after the enactment of the TRA. Thus, for these three situations there are also no demolition expenditures to be considered.

Situation D: The fourth situation focuses on the TRA provision which allows accelerated depreciation of substantially rehabilitated buildings. For the nonresidential property being analyzed here, this provision means that the 150 percent declining balance method may be applied to the entire cost basis of the rehabilitated property. Thus, any remaining cost basis of the existing structure plus the cost of rehabilitation could be depreciated using the 150 percent declining balance method. For purposes of the present analysis, it is assumed that the existing structure has already been fully depreciated. Thus, the resulting estimates of the benefits of this provision are conservative because the potential advantage of accelerated depreciation of any remaining cost basis of the existing structure has been ignored.¹⁵ Comparison of Situation D with Situation B indicates the relative financial viability of the two options, rehabilitation versus redevelopment, after the TRA. In addition, comparison of Situation D with Situation C indicates the effect of the accelerated depreciation provision of the TRA on the financial viability of the rehabilitation option.

Situation E: This situation also deals with the rehabilitation option after the TRA but focuses on the provision which allows 5-year rapid amortization of rehabilitation expenditures. Situations E and D are analyzed separately because the two provisions are not expected to be applied simultaneously to the same project.¹⁶ Comparison of E with B indicates the current relative financial viability of rehabilitation versus redevelopment under the rapid amortization provision, whereas comparison of E with C indicates the effect of the rapid amortization provision of the TRA on the viability of rehabilitation. In addition, comparison of E with D indicates whether the 5-year amortization or the accelerated depreciation provision is more advantageous.

Situation F: The last situation is similar to Situation E except that here the recapture as ordinary income of a portion of the gain upon sale is limited to an amount equalling those deductions taken in excess of what would be allowed under the straight-line method. As

¹³ This assumes that demolition was not the purpose of the original purchase.

¹⁴ If L is the useful life of an asset and A is the percentage rate of acceleration in decimal form, then it turns out that the present value of the total depreciation deductions is maximized if the switch to the straight-line method takes place according to the following rule. Using the particular value for L and A, calculate $j^* = 1 + L + L/A$. Then, if j^* is not an integer, the straight-line method should be used beginning with the first full year after j^* . If, on the other hand, j^* is an integer, then the straight-line method should be used beginning either with year j^* or year $j^* + 1$. Thus for a 45-year useful life and the 200 percent declining balance method, the straight-line method should be used beginning with the twenty-fourth year. For the same life and 150 percent declining balance, the switch should take place in either the sixteenth or seventeenth year, with equal results. The author is indebted to Joel Levy for developing this optimal switch-over rule.

¹⁵ Sensitivity analysis could be conducted with respect to this parameter by assuming a range of alternative values for the remaining cost basis of the existing structure.

¹⁶ While the TRA as enacted does not specifically state that the 5-year amortization and accelerated depreciation provisions cannot be applied simultaneously, the proposed Technical Corrections Act of 1978 (H.R. 6715) does so state.

explained in section 2, the TRA as enacted provides for full recapture upon sale of a property of all amortization deductions taken. Situation E focuses on this "as enacted" provision. The proposed Technical Corrections Act of 1978 (H. R. 6715) being considered by the Congress would limit recapture to deductions in excess of straight line. Situation F treats this proposed amended version of the amortization provision. The comparisons with the other situations (B, C, and D) are analogous to those stated under Situation E. Moreover, a comparison between Situations E and F indicates the effect of the proposed limit for recapture of capital gains as ordinary income.

3.2 LIFE-CYCLE COST MODEL

In this subsection we present the life-cycle cost (LCC) model which was used to compare the cost impacts of the alternative situations described above. The general form of this model is as follows:

| | | | | |
|--|--------------------|-----------------|--|--|
| | Life-Cycle Cost | Initial Cost | Present value of tax benefits from depreciation/ amortization | Present value of after- tax proceeds from sale of property |
| | LCC | = | $C - m \cdot \sum_{t=1}^n D_t(1+r)^{-t}$ | + $(RT_n + GT_n - S_n)(1+r)^{-n}$ |

The interpretation of the above notation as well as an explanation of the assumptions used for each parameter in the present analysis follows.

C = Initial cost of the project. For Situation A where demolition costs are allowed to be treated as current expenditures, this initial cost amount is reduced by the value of the resulting tax savings. The initial costs of the project include all costs associated with demolition and the construction of a new building or with the rehabilitation of the existing building. In order to focus exclusively on the tax effects of the TRA, these initial costs are assumed to be the same (i.e., \$1,000,000) for both redevelopment and rehabilitation. These costs are also assumed to occur at the start of the first year so that no discounting is necessary to calculate the present value.

m = Marginal tax rate applicable to additional income earned by the property owner. Since the present analysis is devoted exclusively to property held by a corporation, the marginal tax rate of 48 percent, which is applicable to ordinary corporate income over \$50,000, is

used in all the calculations.¹⁷ If one were to analyze property owned by unincorporated individuals, different assumptions would have to be made regarding this marginal income tax rate. It should be noted that the present analysis addresses only changes in Federal income taxes. To the extent that State or local income taxes are imposed as a direct percentage of the Federal tax, there could be additional tax impacts favorable to rehabilitation. These impacts would, of course vary by tax jurisdiction. It should further be noted that this analysis does not take into account the 15 percent surcharge on tax preference items exceeding the greater of \$10,000 or the corporation's regular tax liability. Tax preference items include accelerated depreciation and amortization deductions taken in excess of the straight-line method as well as a portion of capital gains. Thus, to the extent

that a particular firm is subject to this surcharge, the TRA would be expected to be less favorable to rehabilitation than the results in section 4 indicate.

- t** = Index number indicating the year of occurrence of the depreciation deductions.
- n** = Year during which the property is sold. It is assumed that the proceeds of the sale occur at the end of the *n*th year. The analysis is conducted for four different holding periods: *n* = 5, 10, 20, and 45.
- D_t** = Depreciation or amortization deduction taken in year *t*. This amount is determined for a useful life of 45 years when the straight line or 150 percent declining balance methods are used and of 5 years when the rapid amortization method is used. Forty-five years is the useful life suggested for office buildings in Revenue Procedure 62-21, which is now in effect for real estate. It is assumed that the depreciation deduction occurs at the end of each year.

¹⁷ See *Corporations and the Federal Income Tax* (1977 Edition), U.S. Department of the Treasury, Internal Revenue Service, Publication 542, p. 6.

r = Rate of discount used to convert all cash flows to a time-equivalent basis. The analysis is conducted for two values of r : 10 percent and 15 percent.

RT_n = Recapture taxes at the end of year n when the property is sold. These taxes are at the ordinary income tax rate, m , and are levied on property to which accelerated depreciation or rapid amortization has been applied. For Situations A, D, and F, the amount of income subject to this recapture tax is equal to the write-offs taken in excess of the straight-line method. For Situation E, all rapid amortization deductions taken during the entire holding period are subject to recapture. Since the straight-line method is used under the other situations (B and C), there are no recapture taxes.

GT_n = Capital gains taxes due at the end of year n when the property is sold. The tax rate of 30 percent, which is applicable for long-term capital gains in the case of corporations, is used in the model.¹⁸ This rate is applied to the calculated capital gain, which consists of the net proceeds from the sale minus the remaining undepreciated cost basis. For Situation B where demolition costs are added to the cost of the land and cannot be depreciated, these capital gains taxes are correspondingly reduced.

S_n = Selling price at the end of year n . This is determined by applying a method of estimating actual economic depreciation (as distinct from tax depreciation) of office buildings developed by Taubman and Rasche.¹⁹ Using historical data published by

the National Association of Building Owners and Managers, these researchers found that the real values of office buildings tend to decrease during year t by an amount approximately equal to $2t/L(L+1)$ times the original cost, where L is the useful life. This annual rate of real depreciation is applied in the LCC model to arrive at a reasonable estimate of the expected selling price at the end of each holding period analyzed. By using real depreciation to determine the selling price, this analysis does not take account of the possible effect of inflation. The more the general price level and property values increase during the holding period, the greater are the benefits of faster write-offs (i.e., some taxes are paid at a later date using "cheaper" dollars). On the other hand, greater inflation also means that capital gains taxes increase. Sensitivity analysis could determine the overall effect of inflation on the results by assuming alternative rates of general inflation and increases in property values.²⁰

This LCC model was used in the development of computer programs written in BASIC Language.²¹ These programs calculate the present value of the after-tax life-cycle costs incurred for each of the six alternative situations described in subsection 3.1 and for the assumptions specified in the above definitions of terms. The results of these calculations are analyzed in the next section.

²⁰ For further discussion of the effects of inflation on the economic analysis of real estate investments, see Kenneth M. Lusht, "Inflation and Real Estate Investment Value," *American Real Estate and Urban Economics Association Journal*, Vol. 6 (Spring 1978), pp. 37-49.

²¹ The author is indebted to Joel Levy for developing these programs, copies of which appear in appendix B.

¹⁸ See *Corporations and the Federal Income Tax* (1977 Edition), U.S. Department of the Treasury, Internal Revenue Service, Publication 542, p. 7.

¹⁹ P. Taubman and R. H. Rasche, "Economic and Tax Depreciation of Office Buildings," *National Tax Journal*, Vol. 22, No. 3 (1969), pp. 334-346.

4. ANALYSIS OF RESULTS

In this section, selected comparisons are made between the present value after-tax life-cycle costs calculated for the alternative situations. The detailed results of the life-cycle cost calculations for each situation based on various discount rates, holding periods, and demolition expenditures are presented in tables A.1 and A.2 of appendix A.²²

Under the assumptions used in this analysis, the results indicate that the TRA has significantly affected the economic trade-off between rehabilitation and redevelopment through a change in the bias of the tax law. For example, table A.1 can be used to calculate how much *more* costly rehabilitation was than redevelopment before the TRA. Assuming a 5-year holding period and demolition costs of 5 percent, the after-tax life-cycle costs are given as \$348,788 for Situation A (redevelopment before the TRA) and as \$365,639 for Situation C (rehabilitation before the TRA). On this basis, rehabilitation is seen to be 4.8 percent *more* costly than redevelopment (i.e., $1 - 365,639/348,788 = 0.0483$). In contrast, using the same assumptions regarding the holding period and demolition costs, one can calculate how much *less* costly rehabilitation has become compared with redevelopment as a result of the rapid amortization provision of the TRA. Table A.1 gives life-cycle costs of \$317,884 for Situation E (rehabilitation after the TRA using rapid amortization) and \$366,625 for Situation B (redevelopment after the TRA). This means that the rapid amortization provision with full recapture as enacted by the TRA has made rehabilitation 13.3 percent *less* costly than redevelopment (i.e., $1 - 317,884/366,625 = 0.1329$). Moreover, if the property is to be held for a longer period, the effect of the TRA is even more pronounced. For example, with similar calculations for a 20-year holding period, rehabilitation is found to have been 4.4 percent *more* costly than redevelopment before the TRA and 28.6 percent *less* costly after the TRA. In addition, if the full recapture rule of this rapid amortization provision were modified to a partial recapture, as proposed in the Technical Corrections Act of 1978, then this analysis shows that rehabilitation would become 16.2 percent less costly than redevelopment for a 5-year holding period and 29.4 percent less costly for a 20-year period.

The TRA provision which allows accelerated depreciation of substantially rehabilitated historic structures also makes rehabilitation less costly than redevelopment, although not quite as dramatically as does the rapid amortization provision. For example, with a 5-year holding period and 5 percent demolition costs,

the accelerated depreciation provision of the TRA makes rehabilitation 1.2 percent *less* costly than redevelopment compared with the 13.3 percent figure cited above for rapid amortization. Under the accelerated depreciation provision, the percentage increases slightly to 1.4 percent when demolition costs are increased to 10 percent of the initial cost of the project. This slight increase is due to the penalty inherent in having to add demolition expenditures to the cost basis of the land, thereby only reducing capital gains taxes later when the property is sold, rather than being able to write the expenditures off as current costs or at least depreciate them over the life of the replacement structure. For longer holding periods, such as 20 years, the accelerated depreciation provision of the TRA makes rehabilitation 2.5 percent less costly than redevelopment with 5 percent demolition costs and 3.0 percent less costly with 10 percent demolition costs.

It should be noted that these calculations regarding the accelerated depreciation provision for substantially rehabilitated historic structures are to be interpreted as lower limits on the relative economic advantage of rehabilitation over redevelopment. This is because one of the advantages of this provision is that the existing cost basis may be converted from straight line to accelerated depreciation (150% declining balance for an office building). By assuming that this existing cost basis is zero, the present analysis has left this advantage out of account. Further sensitivity analysis could include the effect of this advantage by assuming a range of existing cost basis amounts up to the maximum allowed by the TRA (i.e., an amount equal to the cost of the rehabilitation expenditures themselves).

The effect of the TRA on each option considered individually (i.e. redevelopment or rehabilitation) is also of interest. If demolition costs are assumed to represent 5 percent of the total cost of the project, the enactment of the TRA increases the life-cycle cost of the redevelopment option by 5.1 percent for a 5-year holding period and by slightly less for longer periods. The increase in the cost of redevelopment jumps to 9.7 percent for the 5-year holding period, if demolition represents 10 percent of total project expenditures. These cost increases are due to two factors: (1) the required switch from 150 percent declining balance to straight-line depreciation; and (2) the disallowance of demolition costs as a current expense with the requirement that they be added to the cost of the land.

The accelerated depreciation provision for substantially rehabilitated structures has the effect of reducing the after-tax life-cycle cost of rehabilitation by about 1 percent for short holding periods and by over 2 percent for longer holding periods (i.e., 20 years or more). Here again, it should be remembered

²² The author is indebted to Kimberly A. Hockenbery for running the computer programs for these calculations.

that these calculations for the accelerated depreciation provision represent a minimum effect in terms of cost reduction because of the aforementioned assumption that the cost basis of the existing building is zero. The rapid amortization provision has the effect of reducing the cost of rehabilitation by 13.1 percent for a 5-year holding period and by over 28 percent for longer holding periods (i.e., 20 years or more). These dramatic reductions in after-tax life-cycle costs are shown to be in effect already, despite the full recapture rule which inadvertently found its way into the final version of the TRA. If full recapture is replaced by partial recapture as proposed in the Technical Corrections Act of 1978, then the cost reduction as a result of the TRA would be even more significant. As an example, for a 5-year holding period

the partial recapture rapid amortization provision would lead to a 16.0 percent cost reduction, while for a 20-year holding period the provision would lead to a 29.1 percent cost reduction.

The results described above are all based on a 10 percent discount rate. Sensitivity analysis showed that the TRA's favorable impact on rehabilitation is generally reduced by a slight margin when a higher discount rate of 15 percent is used.²³ In most cases, however, the effects of this change in the discount rate are trivial.

²³ Table A.2 of appendix A may be used to derive exact comparisons between rehabilitation and redevelopment before and after enactment of the TRA for a 15 percent discount rate.



This Tudor style mansion in Minneapolis was recently converted into headquarters for an advertising agency. Significant interior features and spaces were retained in the reuse plan.

5. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The tax implications of each of the four relevant provisions of the TRA have been described: (1) accelerated depreciation of substantially rehabilitated historic buildings; (2) rapid amortization of rehabilitation expenditures; (3) denial of demolition costs as current expenses; and (4) denial of accelerated depreciation for replacement structures. An analytical framework was constructed by defining six alternative situations likely to be faced by the owner of an historic property. Then a model was specified which allows the computation of the present value after-tax life-cycle cost associated with each of the six situations. This model takes into account the initial cost of the project, the tax savings due to depreciation or amortization deductions and the tax liabilities arising from both capital gains and recapture as ordinary income which occur when the property is sold. On the basis of the computed life-cycle costs, relevant comparisons were made between the alternative situations.

The analysis of these alternative situations leads to the conclusion that even with the existing rapid amortization provision that requires full recapture of deductions as ordinary income, the TRA has managed to tip the scale in favor of historic preservation. Thus, potential investors and current owners of income-producing historic structures now have a strong incentive to consider rehabilitation as a serious alternative to demolition and redevelopment. Whereas formerly there was a distinct tax bias in favor of demolition and redevelopment, now that tax bias has been reversed, when the TRA provisions are analyzed on a life-cycle cost basis. This new information about the recently legislated tax advantages of historic preservation should prove useful to corporate owners of historic nonresidential properties as well as to policy makers interested in tax incentives for building rehabilitation.

There is need of more research in this area of tax incentives for historic preservation. As noted earlier, the present analysis is limited to nonresidential property owned by corporations. However, the historic preservation provisions of the TRA also apply to residential property and to property owned by individuals or partnerships, as long as these properties are income-



These 19th century buildings in Newburyport, Massachusetts were rehabilitated as shops, offices, and apartments under a plan certified by the Department of the Interior.

producing. This analysis could be extended to these other property and ownership categories by taking into account the appropriate allowable depreciation rates and marginal tax brackets for ordinary and capital gains income. In addition, other tax incentives being considered for adoption could be analyzed. For example, it would be useful to know the likely impact of current proposals to extend the provisions of the TRA to include properties which are not income-producing.²⁴ Another proposal that could be analyzed calls for a 10 percent tax credit for the costs of rehabilitating buildings at least 20 years old.²⁵

²⁴ See, for example, S.1158, H.R. 11745, and H.R. 11817.

²⁵ See S. 2993.

Perhaps the most important, and yet most difficult, area in need of further research concerns the degree to which modified after-tax consequences of the rehabilitation and redevelopment options will actually affect investment decisions. The ultimate question to be resolved is how responsive owners of historic structures will be to the new tax advantages favoring rehabilitation.²⁶

²⁶ The effectiveness of earlier tax incentives for the rehabilitation of low-income housing is discussed in Emil M. Sunley, "Tax Incentive for the Rehabilitation of Housing," *The Appraisal Journal*, Vol. 39 (July 1971), pp. 381-394. See also Gary Fromm (ed.), *Tax Incentives and Capital Spending* (Washington, D.C.: The Brookings Institution, 1971), for a collection of articles devoted to the general area of tax incentives for investment.

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APPENDIX A

DETAILED RESULTS

The following two tables contain the complete results of the life-cycle cost calculations of each of the six alternative situations for various holding periods, demolition expenditures, and discount rates. It should be noted that because rental income from owning the property is not included in the analysis, only comparisons between situations using the same holding period are legitimate. That is, one cannot argue that a 5-year holding period is more cost effective than a 10-year period on the basis of lower life-cycle costs being reported for the former.

Table A.1 PRESENT VALUE, AFTER-TAX, LIFE-CYCLE COSTS (\$) OF ALTERNATIVE SITUATIONS AT A 10 PERCENT DISCOUNT RATE FOR VARIOUS HOLDING PERIODS AND DEMOLITION EXPENDITURES^a

| Situation ^b | Demolition ^c (%) | Holding Period (Years) | | | |
|------------------------|--------------------------------|------------------------|---------|---------|---------|
| | | 5 | 10 | 20 | 45 |
| A | 5 | 348,788 | 563,793 | 767,329 | 857,783 |
| | 10 | 335,255 | 548,038 | 749,946 | 840,005 |
| B | 5 | 366,625 | 590,949 | 805,024 | 899,851 |
| | 10 | 367,613 | 592,941 | 808,574 | 904,905 |
| C | - | 365,639 | 588,957 | 801,474 | 894,796 |
| D | - | 362,321 | 579,547 | 784,711 | 875,561 |
| E | - | 317,884 | 446,254 | 574,471 | 636,083 |
| F | - | 307,085 | 434,520 | 568,009 | 636,083 |

^a These present values were calculated for projects whose total initial costs were assumed to be \$1,000,000.

^b For detailed descriptions of each situation, see subsection 3.1.

^c The percentage of total initial project costs attributable to demolition expenditures. Note that no demolition is involved in Situations C through F.

Table A.2 PRESENT VALUE, AFTER-TAX, LIFE-CYCLE COSTS (\$) OF ALTERNATIVE SITUATIONS AT A 15 PERCENT DISCOUNT RATE FOR VARIOUS HOLDING PERIODS AND DEMOLITION EXPENDITURES^a

| Situation ^b | Demolition ^c (%) | Holding Period (Years) | | | |
|------------------------|--------------------------------|------------------------|---------|---------|---------|
| | | 5 | 10 | 20 | 45 |
| A | 5 | 469,111 | 696,425 | 853,202 | 891,842 |
| | 10 | 453,737 | 678,517 | 833,870 | 872,272 |
| B | 5 | 489,642 | 726,807 | 891,889 | 932,542 |
| | 10 | 490,601 | 728,660 | 894,820 | 936,063 |
| C | - | 488,683 | 724,954 | 888,957 | 929,021 |
| D | - | 484,484 | 714,334 | 872,533 | 911,413 |
| E | - | 423,407 | 556,487 | 652,867 | 678,193 |
| F | - | 414,760 | 548,964 | 650,210 | 678,193 |

^a These present values were calculated for projects whose total initial costs were assumed to be \$1,000,000.

^b For detailed descriptions of each situation, see subsection 3.1.

^c The percentage of total initial project costs attributable to demolition expenditures. Note that no demolition is involved in Situations C through F.

APPENDIX B

COMPUTER PROGRAMS

This appendix contains the BASIC Language listings of the computer programs developed by Joel Levy to calculate the present value after-tax life-cycle costs for the six alternative situations analyzed in this report. Only four programs were needed because, as noted below, the first two programs each served to calculate costs for two of the situations.

Program I: Situations B and C

```
1REM ***BLDG1
10READ D,C,R9,S,N
15F=1/(1+R9)
20F1=F^N
30X1=F*(1-F1)/(1-F)
40X2=C/45
50X3=.48*X1*X2
60C1=S+N*X2-D-C
70C1=C1*F1
80L1=D+C+.3*C1-X3-S*F1
500PRINT"LIFE CYCLE COST=",L1
900END
```

NOTE: INPUT VALUES D,C,R9,S, AND N WERE SPECIFIED
WITHIN PROGRAM.

Program II: Situations A and D

```
1REM***RBLDG2
10READ D,C,R9,S,N,A
15F=1/(1+R9)
30FORI=1TON
40F(I,1)=F↑I
50NEXTI
60R=A/45
70J=INT(46-1/R)
80L=(ABS(J+N)-ABS(J-N))/2
90D(1,1)=R*C
100C(1,1)=D(1,1)
110FORI=2TOL
120D(I,1)=R*(C-C(I-1,1))
130C(I,1)=C(I-1,1)+D(I,1)
140NEXTI
150IFN<=LTHEN310
160L9=1/(45-L)
170FORI=L+1TON
180D(I,1)=L9*(C-C(L,1))
190NEXTI
200C(N,1)=C(L,1)+(N-L)*D(N,1)
310T1=0
320FORI=1TON
340T1=T1+D(I,1)*F(I,1)
350NEXTI
360M1=C(N,1)-N*C/45
370M2=S-C+C(N,1)
380IFM2>0THEN405
390L2=.3*M2-S
400GOTO470
405IFM2>M1THEN420
410L2=.48*M2-S
415GOTO470
420K1=S-C*(1-(N/45))
430IFK1<0THEN460
440L2=.48*M1+.3*K1-S
450GOTO470
460L2=.48*M1-S
470L1=D+C+L2*F(N,1)
480L1=L1-.48*(D+T1)
500PRINT"LIFE CYCLE COST=",L1
900END
```

NOTE: INPUT VALUES D,C,R9,S,N, AND A WERE SPECIFIED
WITHIN PROGRAM.

Program III: Situation E

```
1REM ***RBLDG3
10READ C,R9,S,N
15F=1/(1+R9)
20DIMF(45,1),D(45,1),C(45,1)
30FORI=1TON
40F(I,1)=F↑I
50NEXTI
80L=(ABS(N+5)-ABS(N-5))/2
90D(1,1)=C/5
100C(1,1)=D(1,1)
110FORI=2TOL
120D(I,1)=C/5
130C(I,1)=C(I-1,1)+D(I,1)
140NEXTI
310T1=0
320FORI=1TOL
340T1=T1+D(I,1)*F(I,1)
350NEXTI
360M1=C(L,1)-N*C/45
370M2=S-C+C(L,1)
380IFM2>0THEN405
390L2=.3*M2-S
400GOTO470
405IFM2>M1THEN420
410L2=.48*M2-S
415GOTO470
420K1=S-C*(1-(N/45))
430IFK1<0THEN460
440L2=.48*M1+.3*K1-S
450GOTO470
460L2=.48*M1-S
470L1=C+L2*F(N,1)
480L1=L1-.48*T1
500PRINT"LIFE CYCLE COST=",L1
900END
```

NOTE: INPUT VALUES C,R9,S, AND N WERE SPECIFIED
WITHIN PROGRAM.

Program IV: Situation F

```
1 REM...RBLDG3A
10 READ C,R9,S,N
15 F=1/(1+R9)
20 DIM F(45,1),D(45,1),C(45,1)
30 FOR I=1 TO N
40 F(I,1)=F↑I
50 NEXT I
80 L=(ABS(N+5)-ABS(N-5))/2
90 D(1,1)=C/5
100 C(1,1)=D(1,1)
110 FOR I=2 TO L
120 D(I,1)=C/5
130 C(I,1)=C(I-1,1)+D(I,1)
140 NEXT I
310 T1=0
320 FOR I=1 TO L
340 T1=T1+D(I,1)*F(I,1)
350 NEXT I
360 M1=C(L,1)-N*C/45
370 M2=S-C+C(L,1)
380 IF M2>0 THEN 405
390 L2=.3*M2-S
400 GOTO 470
405 IF M2>M1 THEN 420
410 L2=.48*M2-S
415 GOTO 470
420 K1=S-C
430 IF K1<0 THEN 460
440 L2=.48*C(L,1)+.3*K1-S
450 GOTO 470
460 L2=.48*M2-S
470 L1=C+L2*F(N,1)
480 L1=L1-.48*T1
500 PRINT "LIFE CYCLE COST=",L1
900 END
```

NOTE: INPUT VALUES C,R9,S,AND N WERE SPECIFIED
WITHIN PROGRAM.

APPENDIX C

PUBLIC LAW 94-455, SECTION 2124

The following is the text of the historic preservation provisions of the Tax Reform Act of 1976 (P.L. 94-455):

SEC. 2124. TAX INCENTIVES TO ENCOURAGE THE PRESERVATION OF HISTORIC STRUCTURES.

(a) AMORTIZATION OF REHABILITATION EXPENDITURES.—

(1) ALLOWANCE OF DEDUCTION.—Part VI of subchapter B of chapter 1 (relating to itemized deductions) is amended by adding at the end thereof the following new section:

26 USC 191.

“SEC. 191. AMORTIZATION OF CERTAIN REHABILITATION EXPENDITURES FOR CERTIFIED HISTORIC STRUCTURES.

“(a) ALLOWANCE OF DEDUCTION.—Every person, at his election, shall be entitled to a deduction with respect to the amortization of the amortizable basis of any certified historic structure (as defined in subsection (d)) based on a period of 60 months. Such amortization deduction shall be an amount, with respect to each month of such period within the taxable year, equal to the amortizable basis at the end of such month divided by the number of months (including the month for which the deduction is computed) remaining in the period. Such amortizable basis at the end of the month shall be computed without regard to the amortization deduction for such month. The amortization deduction provided by this section with respect to any month shall be in lieu of the depreciation deduction with respect to such basis for such month provided by section 167. The 60-month period shall begin, as to any historic structure, at the election of the taxpayer, with the month following the month in which the basis is acquired, or with the succeeding taxable year.

“(b) ELECTION OF AMORTIZATION.—The election of the taxpayer to take the amortization deduction and to begin the 60-month period with the month following the month in which the basis is acquired, or with the taxable year succeeding the taxable year in which such basis is acquired, shall be made by filing with the Secretary, in such manner, in such form, and within such time as the Secretary may by regulations prescribe, a statement of such election.

“(c) TERMINATION OF AMORTIZATION DEDUCTION.—A taxpayer who has elected under subsection (b) to take the amortization deduction provided in subsection (a) may, at any time after making such election, discontinue the amortization deduction with respect to the remainder of the amortization period, such discontinuance to begin as of the beginning of any month specified by the taxpayer in a notice in writing filed with the Secretary before the beginning of such month. The depreciation deduction provided under section 167 shall be allowed, beginning with the first month as to which the amortization deduction does not apply, and the taxpayer shall not be entitled to any further amortization deduction under this section with respect to such certified historic structure.

“(d) DEFINITIONS.—For purposes of this section—

“(1) CERTIFIED HISTORIC STRUCTURE.—The term ‘certified historic structure’ means a building or structure which is of a character subject to the allowance for depreciation provided in section 167 which—

“(A) is listed in the National Register,

“(B) is located in a Registered Historic District and is certified by the Secretary of the Interior as being of historic significance to the district, or

“(C) is located in an historic district designated under a statute of the appropriate State or local government if such statute is certified by the Secretary of the Interior to the Secretary as containing criteria which will substantially achieve the purpose of preserving and rehabilitating buildings of historic significance to the district.

“(2) AMORTIZABLE BASIS.—The term ‘amortizable basis’ means the portion of the basis attributable to amounts expended in connection with certified rehabilitation.

“(3) CERTIFIED REHABILITATION.—The term ‘certified rehabilitation’ means any rehabilitation of a certified historic structure which the Secretary of the Interior has certified to the Secretary as being consistent with the historic character of such property or the district in which such property is located.

“(e) DEPRECIATION DEDUCTION.—The depreciation deduction provided by section 167 shall, despite the provisions of subsection (a), be allowed with respect to the portion of the adjusted basis which is not the amortizable basis.

“(f) LIFE TENANT AND REMAINDERMAN.—In the case of property held by one person for life with remainder to another person, the deduction under this section shall be computed as if the life tenant were the absolute owner of the property and shall be allowable to the life tenant.

“(g) CROSS REFERENCES.—

“(1) For rules relating to the listing of buildings and structures in the National Register and for definitions of ‘National Register’ and ‘Registered Historic District’, see section 470 et seq. of title 16 of the United States Code.

“(2) For special rule with respect to certain gain derived from the disposition of property the adjusted basis of which is determined with regard to this section, see section 1245.”

(2) GAIN ON DISPOSITION.—Section 1245(a) (relating to gain from dispositions of certain depreciable property) is amended by striking out “or 190” each place it appears and inserting in lieu thereof “190, or 191”. 26 USC 1245.

(3) CONFORMING AMENDMENTS.—

(A) The table of sections for part VI of subchapter B of chapter 1 is amended by inserting at the end thereof the following new item:

“Sec. 191. Amortization of certain rehabilitation expenditures for certified historic structures.”

(B) Section 642(f) (relating to amortization deductions of estates and trust) is amended by striking out “and 188” and inserting in lieu thereof “188, and 191”. 26 USC 642.

(C) Section 1082(a)(2)(B) (relating to basis for determining gain or loss) is amended by striking out “or 188” and inserting in lieu thereof “188, or 191”. 26 USC 1082.

26 USC 1250.

Ante, pp. 1914,
1916.
26 USC 191
note.

(D) Section 1250(b)(3) (relating to depreciation adjustments) is amended by striking out "or 190" and inserting in lieu thereof "190 or 191".

(4) EFFECTIVE DATE.—The amendments made by this subsection shall apply with respect to additions to capital account made after June 14, 1976 and before June 15, 1981.

(b) DEMOLITION.—

(1) DISALLOWANCE OF DEDUCTIONS.—Part IX of subchapter B of chapter 1 (relating to items not deductible) is amended by adding at the end thereof the following new section:

26 USC 280B.

"SEC. 280B. DEMOLITION OF CERTAIN HISTORIC STRUCTURES.

"(a) GENERAL RULE.—In the case of the demolition of a certified historic structure (as defined in section 191(d)(1))—

"(1) no deduction otherwise allowable under this chapter shall be allowed to the owner or lessee of such structure for—

"(A) any amount expended for such demolition, or

"(B) any loss sustained on account of such demolition; and

"(2) amounts described in paragraph (1) shall be treated as properly chargeable to capital account with respect to the land on which the demolished structure was located.

"(b) SPECIAL RULE FOR REGISTERED HISTORIC DISTRICTS.—For purposes of this section, any building or other structure located in a Registered Historic District shall be treated as a certified historic structure unless the Secretary of the Interior has certified, prior to the demolition of such structure, that such structure is not of historic significance to the district."

(2) CLERICAL AMENDMENT.—The table of sections for part IX of subchapter B of chapter 1 is amended by adding at the end thereof the following new item:

"Sec. 280B. Demolition of certain historic structures."

26 USC 280B
note.

(3) EFFECTIVE DATE.—The amendments made by this subsection shall apply with respect to demolitions commencing after June 30, 1976, and before January 1, 1981.

(c) DEPRECIATION OF IMPROVEMENTS.—

26 USC 167.

(1) METHOD OF DEPRECIATION.—Section 167 (relating to depreciation) is amended by redesignating subsection (n) as (p), and by inserting after subsection (m) the following new subsection:

"(n) STRAIGHT LINE METHOD IN CERTAIN CASES.—

"(1) IN GENERAL.—In the case of any property in whole or in part constructed, reconstructed, erected, or used on a site which was, on or after June 30, 1976, occupied by a certified historic structure (as defined in section 191(d)(1)) which is demolished or substantially altered (other than by virtue of a certified rehabilitation as defined in section 191(d)(3)) after such date—

"(A) subsections (b), (j), (k), and (l) shall not apply,

"(B) the term 'reasonable allowance' as used in subsection (a) shall mean only an allowance computed under the straight line method.

"(2) EXCEPTION.—The limitations imposed by this subsection shall not apply to personal property."

26 USC 167
note.

(2) EFFECTIVE DATE.—The amendment made by this subsection shall apply to that portion of the basis which is attributable to construction, reconstruction, or erection after December 31, 1975, and before January 1, 1981.

(d) SUBSTANTIALLY REHABILITATED PROPERTY.—

(1) Section 167 (relating to depreciation) is amended by insert-

ing after subsection (n) (as added by subsection (c) of this section) the following new subsection:

“(o) SUBSTANTIALLY REHABILITATED HISTORIC PROPERTY.—

“(1) GENERAL RULE.—Pursuant to regulations prescribed by the Secretary, the taxpayer may elect to compute the depreciation deduction attributable to substantially rehabilitated historic property as though the original use of such property commenced with him. The election shall be effective with respect to the taxable year referred to in paragraph (2) and all succeeding taxable years.

“(2) SUBSTANTIALLY REHABILITATED PROPERTY.—For purposes of paragraph (1), the term ‘substantially rehabilitated historic property’ means any certified historic structure (as defined in section 191(d)(1)) with respect to which the additions to capital account for any certified rehabilitation (as defined in section 191(d)(3)) during the 24-month period ending on the last day of any taxable year, reduced by any amounts allowed or allowable as depreciation or amortization with respect thereto, exceeds the greater of—

“(A) the adjusted basis of such property, or

“(B) \$5,000.

The adjusted basis of the property shall be determined as of the beginning of the first day of such 24-month period, or of the holding period of the property (within the meaning of section 1250 (e)), whichever is later.”

Ante, p. 1916.

(2) EFFECTIVE DATE.—The amendment made by this subsection shall apply with respect to additions to capital account occurring after June 30, 1976, and before July 1, 1981.

26 USC 167
note.

(e) TRANSFERS OF PARTIAL INTERESTS IN PROPERTY FOR CONSERVATION PURPOSES.—

(1) INCOME TAX DEDUCTIONS FOR CHARITABLE CONTRIBUTIONS OF PARTIAL INTERESTS IN PROPERTY FOR CONSERVATION PURPOSES.—Section 170(f)(3) (relating to charitable contributions) is amended—

26 USC 170.

(A) by striking out “or” at the end of subparagraph (B)(i),

(B) by striking out “property.” at the end of subparagraph (B)(ii) and inserting in lieu thereof “property.”,

(C) by adding after clause (ii) of subparagraph (B) the following new clauses:

“(iii) a lease on, option to purchase, or easement with respect to real property of not less than 30 years’ duration granted to an organization described in subsection (b)(1)(A) exclusively for conservation purposes, or

“(iv) a remainder interest in real property which is granted to an organization described in subsection (b)(1)(A) exclusively for conservation purposes.”, and

(D) by adding at the end thereof the following new subparagraph:

“(C) CONSERVATION PURPOSES DEFINED.—For purposes of subparagraph (B), the term ‘conservation purposes’ means—

“(i) the preservation of land areas for public outdoor recreation or education, or scenic enjoyment;

“(ii) the preservation of historically important land areas or structures; or

“(iii) the protection of natural environmental systems.”.

(2) ESTATE TAX DEDUCTION FOR TRANSFER OF PARTIAL INTERESTS IN PROPERTY FOR CONSERVATIONS PURPOSES.—Section 2055(e)(2)

26 USC 2055.

Ante, p. 1919.

26 USC 2522.

26 USC 170
note.

(relating to deductions from gross estate) is amended by striking out "(other than a remainder interest in a personal residence or farm or an undivided portion of the decedent's entire interest in property)" and inserting in lieu thereof "(other than an interest described in section 170(f)(3)(B))".

(3) GIFT TAX DEDUCTION FOR TRANSFERS OF PARTIAL INTERESTS IN PROPERTY FOR CONSERVATION PURPOSES.—Section 2522(c)(2) (relating to deductions from taxable gifts) is amended by striking out "(other than a remainder interest in a personal residence or farm or an undivided portion of the donor's entire interest in property)" and inserting in lieu thereof "(other than an interest described in section 170(f)(3)(B))".

(4) EFFECTIVE DATE.—The amendments made by this subsection shall apply with respect to contributions or transfers made after June 13, 1976, and before June 14, 1977.

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